

Speaker: Dr Leo Creedon, Atlantic Technological University

Title: Derivations of group algebras, and their generalisations as partial algebraic structures

Abstract: The derivations of an associative algebra form a Lie algebra, but it is rarely the case that this set of derivations forms an associative algebra. In this talk the finitely generated group algebras whose derivations form an associative algebra are fully determined.

Necessary and sufficient conditions on a group algebra of a finitely generated group G over a finite field K are determined such that the set of derivations of the group algebra form an associative K -algebra. Since the composition of derivations is rarely a derivation, this motivates the following question: what associative algebraic structure do derivations have? This leads to the definition of new partial algebraic systems. These new structures are defined, and their theory is developed. Derivations of associative algebras give examples of such structures.

This is joint work with Kieran Hughes